

WHAT IS CLAIMED:

- sub  
A2
1. A cutting tool for drilling and turning, comprising:  
a base body comprising a clamping part and a working part axially spaced from each other; and  
an indexable tip, releasably connected to said working part, comprising a hexagonal shape having at least one circumferential cutting edge and obtuse and acute corner angles.
  2. The cutting tool in accordance with claim 1, wherein said working part is essentially cylindrical.
  3. The cutting tool in accordance with claim 1, wherein said indexable tip is positioned at an end of said working part remote from said clamping part.
  4. The cutting tool in accordance with claim 1, wherein said working part comprises a flute running in a direction of a tool axis and a form-locking seat for said indexable tip.
  5. The cutting tool in accordance with claim 4, wherein, when said indexable tip is seated on said working part, at least one cutting edge slightly projects from said working part.
  6. The cutting tool in accordance with claim 4, wherein said flute running in a direction of said tool axis is formed with a twist.
  7. The cutting tool in accordance with claim 1, wherein said hexagonal shape of said indexable tip comprises alternately obtuse and acute corner angles and six straight cutting edges.
  8. The cutting tool in accordance with claim 7, wherein a greatest width of said indexable tip is at least about 0.92 times a diameter of said working part.
  9. The cutting tool in accordance with claim 1, wherein said at least one cutting edge comprises three cutting edges, and wherein a trajectory of at least a part

of one of said three cutting edges projects slightly beyond an outer contour of said working part.

10. The cutting tool in accordance with claim 1, wherein said base body comprises at least one bore for inserting at least one of coolant and lubricant, and an exit of said at least one bore is directed at said indexable tip.

11. The cutting tool in accordance with claim 10, wherein said exit of said at least one bore is obliquely arranged relative to a tool axis.

12. The cutting tool in accordance with claim 11, wherein said exit of said at least one bore is arranged at an angle between about  $15^\circ$  and  $75^\circ$  to said tool axis.

13. The cutting tool in accordance with claim 12, wherein said exit of said at least one bore is arranged at an angle between about  $25^\circ$  and  $45^\circ$  to said tool axis.

14. The cutting tool in accordance with claim 1, wherein said indexable tip comprises a center hole and the center hole of said indexable tip is eccentrically positioned outside a center of said working part.

15. The cutting tool in accordance with claim 1, wherein said at least one cutting edge comprises a plurality of cutting edges arranged to form acute angled corners having an angle of about  $88^\circ \pm 1.7^\circ$ .

16. The cutting tool in accordance with claim 15, wherein said at least one cutting edge comprises a plurality of cutting edges arranged to form acute angled corners having an angle of about  $88^\circ \pm 0.3^\circ$ .

17. The cutting tool in accordance with claim 1, wherein a front cutting edge of said indexable tip forms an angle of about  $89.8^\circ \pm 0.5^\circ$  with an axis of tool rotation.

18. An indexable tip for a cutting tool for the machining of materials, comprising:

a flat supporting area;

a face opposite said supporting area;  
said flat supporting area and said face being arranged to form open spaces  
coupling said supporting area and said face; and  
six circumferential cutting edges arranged to form acute and obtuse angled  
corners,  
wherein a vertical distance of said cutting edges from said supporting area in  
a region of said obtuse-angled corners is a minimum.

19. The indexable tip in accordance with claim 18, wherein said cutting tool  
is structured for the machining of metals and alloys.

20. The indexable tip in accordance with claim 18, further comprising an  
attachment device formed as a center hole.

21. The indexable tip in accordance with claim 18, wherein said cutting  
edges are arranged to form alternately acute-angled corners and obtuse-angled  
corners.

22. The indexable tip in accordance with claim 18, wherein said cutting  
edges form acute angled corners having an angle of about  $88^\circ \pm 1.7^\circ$ .

23. The indexable tip in accordance with claim 22, wherein said acute  
angled corners are about  $88^\circ \pm 0.5^\circ$ .

24. The indexable tip in accordance with claim 22, wherein said acute  
angled corners are about  $88^\circ \pm 0.3^\circ$ .

25. The indexable tip in accordance with claim 18, wherein said cutting  
edges are oriented at an angle of between about  $2^\circ$  and  $10^\circ$  to said supporting area.

26. The indexable tip in accordance with claim 25, wherein said cutting  
edges are oriented at an angle between about  $4^\circ$  and  $8^\circ$  to said supporting area.

27. The indexable tip in accordance with claim 25, wherein said cutting  
edges are oriented at an angle of about  $7^\circ \pm 0.5^\circ$  to said supporting area.

28. The indexable tip in accordance with claim 18, wherein a part of said face immediately bordering said cutting edge forms an angle of between about  $2^{\circ}$  and  $18^{\circ}$  with said supporting area.

29. The indexable tip in accordance with claim 28, wherein a part of said face immediately bordering said cutting edge forms an angle of between about  $4^{\circ}$  and  $12^{\circ}$  with said supporting area.

30. The indexable tip in accordance with claim 28, wherein a part of said face immediately bordering said cutting edge forms an angle of between about  $5^{\circ}$  and  $10^{\circ}$  with said supporting area.

31. The indexable tip in accordance with claim 18, wherein the open spaces form an angle of between about  $5^{\circ}$  and  $12^{\circ}$  with a straight line normal to said supporting area at said cutting edges.

32. The indexable tip in accordance with claim 31, wherein the open spaces form an angle of between about  $6^{\circ}$  and  $11^{\circ}$  with a straight line normal to said supporting area at said cutting edges.

33. The indexable tip in accordance with claim 31, wherein the open spaces form an angle of about  $7^{\circ} \pm 0.5^{\circ}$  with a straight line normal to said supporting area at said cutting edges.

34. The indexable tip in accordance with claim 18, wherein the open spaces are divided into at least two sections comprising a first section, bordering the cutting edges, forming an angle of between about  $5^{\circ}$  and  $12^{\circ}$ , and a second section, bordering said supporting area, forming an angle of between about  $12^{\circ}$  to  $25^{\circ}$  with a straight line normal to said supporting area.

35. The indexable tip in accordance with claim 34, wherein said first section forms an angle of between about  $6^{\circ}$  and  $11^{\circ}$ .

36. The indexable tip in accordance with claim 34, wherein said first section

forms an angle of about  $7^\circ \pm 0.5^\circ$ .

37. The indexable tip in accordance with claim 34, wherein said second section forms an angle of between about  $14^\circ$  and  $22^\circ$ .

38. The indexable tip in accordance with claim 34, wherein said second section forms an angle of about  $15^\circ \pm 0.5^\circ$ ,

39. The indexable tip in accordance with claim 18, wherein said corners are rounded off.

2025-10-24 10:50:40